ISTEP+ Mathematics Sample Items Grades 3-5
(Beginning in Spring 2009)

1. Grade 3 Multiple Choice Item (Computation)

Solve the problem below.

48 + 23 = ____

A. 70

B. 71

C. 61

D. 60

2. Grade 3 Multiple Choice Item (Number Sense)

Round the number below to the nearest hundred.

873

A. 800

B. 870

C. 900

D. 860

3. Grade 3 Constructed Response Item (Computation/Problem Solving)

Nick has 5 bags, each with 7 stickers. Mary has 10 more stickers than Nick.

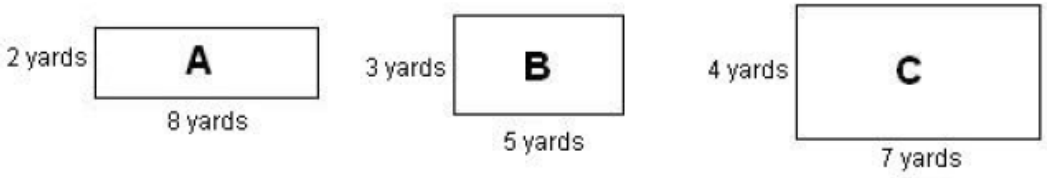
How many stickers do Nick and Mary have in all?

Show All Work

Answer_____stickers

4. Grade 4 Extended Response Item (Measurement/Problem Solving)

The diagram below shows the three floors Elaine will mop for her summer job.



What is the total area, in square yards, that Elaine will mop if she mops each floor once?

Show All Work

Answer _____ square yards

This week, Elaine has to mop floor B twice. At the end of the week, she feels she mopped a larger area by mopping floor B twice than mopping floors A and C once.

Use words, numbers, or symbols to explain why Elaine is NOT correct. Be sure to indicate the areas to support your answer.

_____

_____

_____

_____

5. Grade 4 Extended Response Item (Measurement/Problem Solving)

Dean is painting a wall that is 16 feet long and 9 feet high. One small can of paint will cover an area of 50 square feet.

How many cans of paint will Dean need to paint the wall?

Area of a rectangle $= lw$ = length × width

Show All Work

Answer _____cans

Dean needs to paint a 2nd wall that measures 25 feet long and 5 feet high. He decides to buy 5 small cans of paint.

Use words, numbers, or symbols to verify if Dean has purchased enough paint to completely paint BOTH walls.

_____

_____

_____

_____

6. Grade 4 Constructed Response Item (Number Sense/Problem Solving)

Three friends were comparing the number of crackers they ate from their snack bags. The numbers are listed below.

$1\frac{3}{4}$ $\frac{7}{10}$ 0.25

What is the TOTAL number of crackers the three friends ate in decimal form?

Show All Work

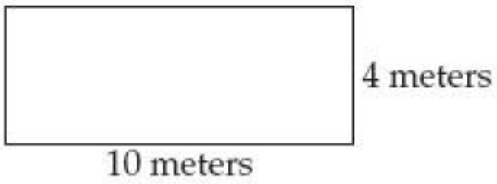
Answer _____crackers

What is the number as a fraction?

Answer _____crackers

7. Grade 4 Multiple Choice Item (Measurement)

Study the rectangle below.



What is the perimeter, in meters, of the rectangle?

A. 14 meters

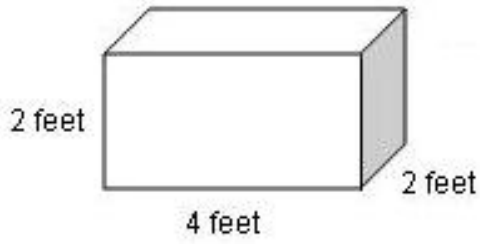
B. 18 meters

C. 28 meters

D. 40 meters

8. Grade 5 Multiple Choice Item (Measurement)

Mike has a fish tank shaped like a rectangular prism. A diagram of the tank is shown below.



Volume of rectangular prism = lwh
= length x width x height

What is the volume, in cubic feet, of the fish tank?

A. 6 cubic feet

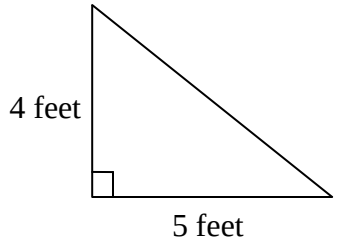
B. 8 cubic feet

C. 10 cubic feet

D. 16 cubic feet

9. Grade 5 Extended Response Item (Measurement/Problem Solving)

Joan needs to paint the cardboard triangle shown in the diagram below for a school project.



Area of triangle = ½ bh
= ½ x base x height

Joan has a bottle of paint that covers an area of 8 square feet. She thinks she will have to buy another bottle of paint to paint the front of the cardboard triangle.

Use words, numbers, or symbols to prove that Joan is correct.

_____

_____

_____

_____

If Joan also wants to paint the back of the cardboard triangle, what is the total area, in square feet, that she will have left to paint AFTER using one bottle of paint?

Show All Work

Answer _____square feet

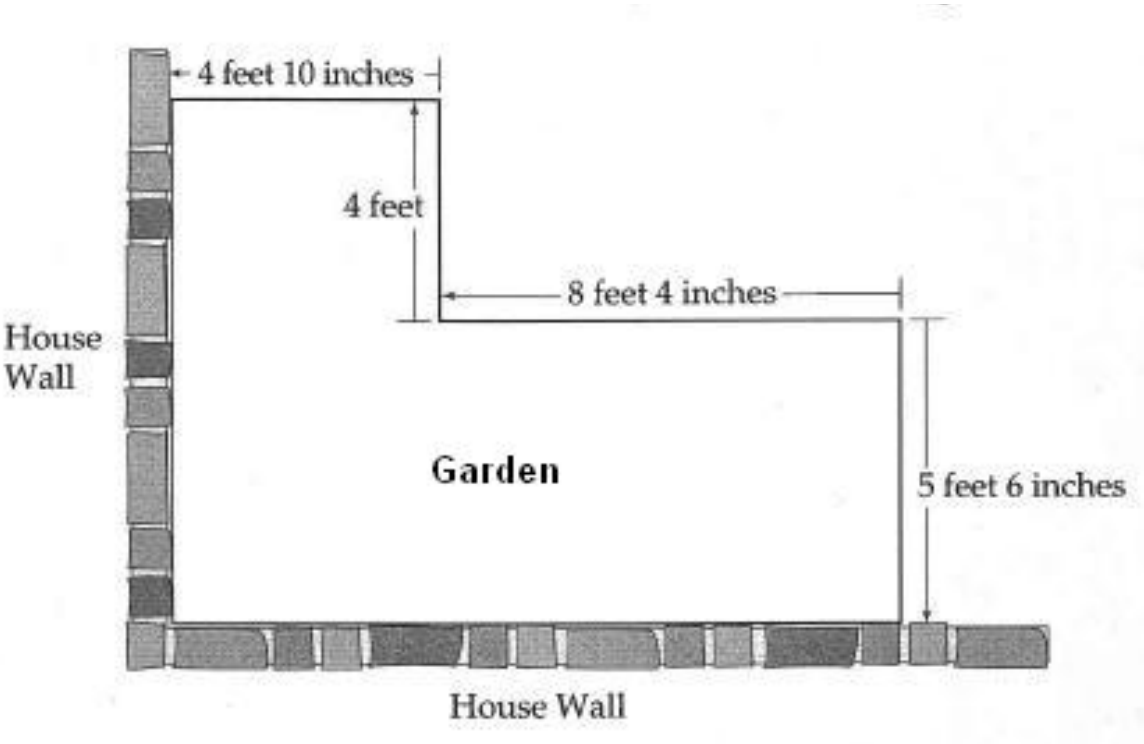
How many bottles of paint will she need to paint the entire front AND back of the cardboard triangle?

Show All Work

Answer _____bottles of paint

10. Grade 5 Multiple Choice Item (Problem Solving)

Daniel is building a garden in his yard. The measurements of the garden are shown in the diagram below.



What is the total PERIMETER, in feet and inches, of the garden?

A. 22 feet 4 inches

B. 22 feet 8 inches

C. 44 feet 8 inches

D. 45 feet 4 inches

Scoring Guide

1. **B. 71**
2. **C. 900**

3. **Grade 3 Constructed Response Item (Computation/Problem Solving)**

- 80 stickers

Sample Process:

Nick: 7 + 7 + 7 + 7 + 7 = 35
Mary: 35 + 10 = 45
Total: 35 + 45 = 80

4. **Grade 4 Extended Response Item (Measurement/Problem Solving)**

- 59 square yards

AND

- Elaine is not correct because mopping Floor B twice is less area than Floors A and C combined.

Sample Process:

Floor A = 2 x 8 = 16 square yards
Floor B = 3 x 5 = 15 square yards
Floor C = 4 x 7 = 28 square yards

16 + 15 + 28 = 59 square yards

Floor B twice is 15 x 2 = 30 square yards
Floors A and C together is 16 + 28 = 44 square yards

5. **Grade 4 Extended Response Item (Measurement/Problem Solving)**

- 3 cans

AND

- Dean will need 1 more can of paint to cover both walls.

Sample Process:

16 x 9 = 144 square feet
50 + 50 + 50 = 150
3 cans for 144 square feet

Second wall is 25 x 5 = 125 square feet
125 + 144 = 269 square feet for both walls
50 + 50 + 50 + 50 + 50 = 250 (5 cans)
1 more can: 250 + 50 = 300

6. Grade 4 Constructed Response Item (Number Sense/Problem Solving)

- 2.7 or 2.70

AND

- $2\frac{7}{10}$

Sample Process:
1 ¾ = 1.75 7/10 = 0.7 1.75 + 0.7 + 0.25 = 2.70

7. C. 28 meters
8. D. 16 cubic feet

9. Grade 5 Extended Response Item (Measurement/Problem Solving)

- The area of the triangle is ½ x 4 x 5 = 10 square feet. Since she only has enough paint to cover 8 square feet, she will need another bottle of paint.

AND

- 12 square feet

AND

- 3 bottles of paint

Sample Process:
Area of front of triangle: 4 x 5 = 20 20 ÷ 2 = 10 square feet 10 + 10 = 20 square feet for the front and back 20 – 8 = 12 square feet left 8 + 8 = 16 16 + 8 = 24 so 3 bottles needed

10. D. 45 feet 4 inches